



Bridging the Gap: Utilizing Artificial Intelligence to Advance Traditional Persian Medicine

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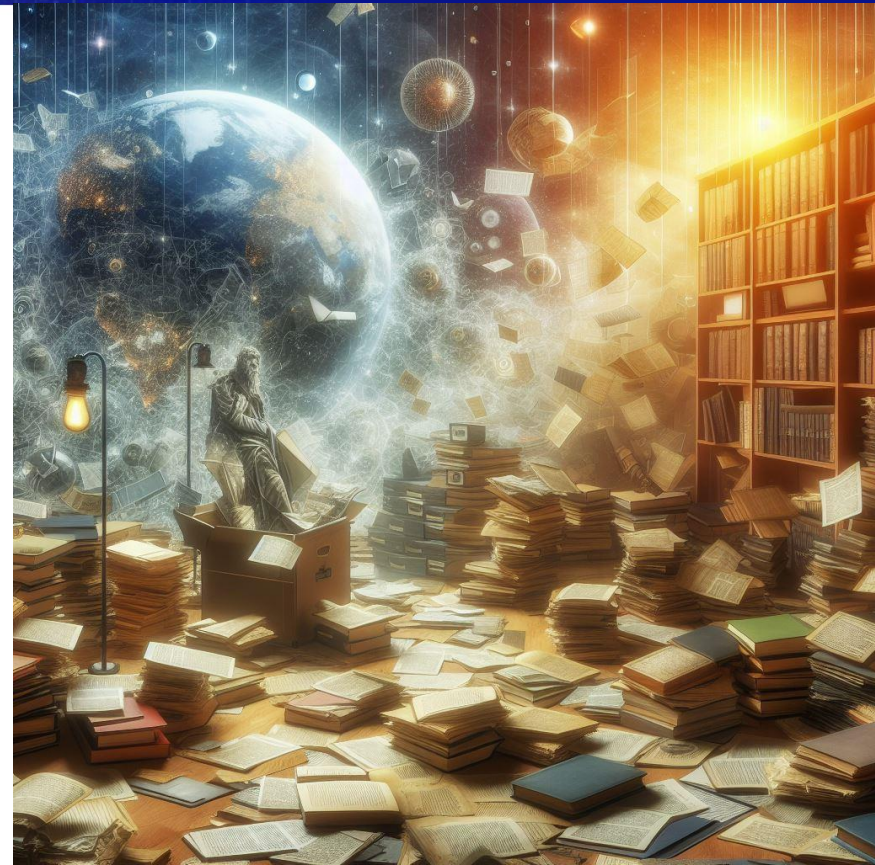
Traditional Persian Medicine: A Legacy of Healing

- With a rich history dating back thousands of years
- Holistic approach to health
- Documented effectiveness in certain areas



Challenges Facing TPM

- Disseminating vast knowledge base
- Standardizing practices
- Achieving widespread clinical validation





Artificial Intelligence: A Bridge to the Future

- Revolutionary capabilities in data analysis & pattern recognition
- Unique opportunity to address TPM limitations



The age of AI has begun !

1. AI Applications in Knowledge Organization

- Natural Language Processing (NLP) analyzes historical texts
 - **Example:** By analyzing a large corpus of historical texts related to TPM, NLP can identify patterns in plant use and potential treatment recommendations.
- Creates a comprehensive digital **library** of TPM knowledge
- Improves access and understanding for practitioners & researchers



2. AI Applications in Treatment Optimization

- Machine Learning analyzes patient data
- Identifies **correlations** between **patient characteristics** and **treatment outcomes**
- Leads to **standardized** practices and more **effective** treatment protocols





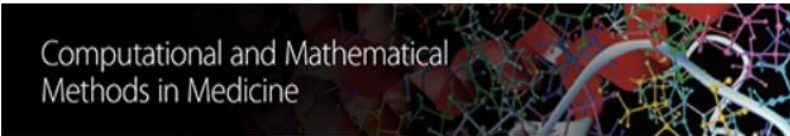
Benefits of Machine Learning in TPM

- **Personalized Treatment:** By understanding how patient characteristics influence treatment outcomes, practitioners can tailor TPM interventions to each individual for potentially improved efficacy.
- **Improved Treatment Protocols:** Insights from machine learning can inform the development of more standardized and evidence-based TPM treatment protocols.
- **Identification of Effective Interventions:** Machine learning can help identify which TPM interventions are most effective for specific health conditions based on real-world patient data.

[Journal List](#) > [Comput Math Methods Med](#) > [v.2019; 2019](#) > PMC6791233

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An Ontology-Based Artificial Intelligence Model for Medicine Side-Effect Prediction: Taking Traditional Chinese Medicine as an Example

[Yuanzhe Yao](#), ¹ [Zeheng Wang](#), ^{1, 2} [Liang Li](#), ¹ [Kun Lu](#), ³ [Runyu Liu](#), ¹ [Zhiyuan Liu](#), ¹ and [Jing Yan](#) ⁴

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- The research paper focuses on developing an ontology-based model for AI-assisted medicine side-effect prediction, combining traditional Chinese medicine (TCM) with artificial intelligence (AI) techniques.
 - The model consists of three main components:
 - The drug model
 - Treatment model
 - AI-assisted prediction model
 - It utilizes an artificial neural network (ANN) structure trained on 242 TCM prescriptions to predict side effects based on ontology-based attributions like "hot" and "cold"
- The results show promising potential in AI-assisted side-effect prediction, but the model's accuracy heavily relies on having sufficient clinical data, indicating the need for further exploration to enhance prediction accuracy

3. AI Applications in Drug Discovery and Development

- AI analyzes **vast databases of medicinal plants** used in TPM
- **Identifies promising candidates** for further research and drug development
- Potential to discover **novel therapeutic agents**



4. AI Applications in Clinical Validation and Research

- AI-powered clinical trials designed to evaluate TPM interventions
- Improved **efficiency** in research
- Paves the way for **integration** of evidence-based TPM into mainstream healthcare



5. Promoting the Holistic View of TPM with AI

- Understanding Patient Interactions
 - *AI can analyze vast datasets of patient information, including medical history, lifestyle habits, and social factors.*
- Predicting Treatment Side Effects
- Developing Personalized Wellness Plans






Conclusion

- AI offers a powerful toolkit to advance TPM
- Unlocking TPM's full potential for improved patient care
- Importance of addressing data quality, bias, and ethical considerations



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